

4. Descriptions of Indian and Burmese Land-Shells referred to the Genera *Macrochlamys*, *Bensonia*, *Taphrospira*, (gen. nov.), *Microcystina*, *Euplecta*, and *Polita*. By W. T. BLANFORD, C.I.E., LL.D., F.R.S., V.P.Z.S.

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(Plate XXV.*)

The following pages contain diagnoses of several Indian land-shells that are believed to be undescribed. The majority belong to the genus *Macrochlamys*, and have been met with in the course of an attempt at monographing the forms found in the Empire of British India. Only those kinds have been described of which the localities are believed to be accurately ascertained, which are sufficiently distinct to render it probable that they may be recognised from their description, and of which type specimens are available for deposit in the British Museum.

Some of the specimens are from my own collections made in India and Burma, others are from the British Museum accumulations, whilst for others I am indebted to Colonel Godwin-Austen, Colonel Beddome, and Mr. Hugh Fulton. I have to acknowledge the valuable assistance and advice of Mr. E. A. Smith in my examination of the British Museum specimens.

BENSONIA NEPALENSIS, Nevill MS. (Plate XXV. fig. 1.)

Testa aperte perforata, conoideo-depressa, sublenticularis, tenuis, superne oblique et rugose plicata, subtus nitidior atque striatula, haud decussata; spira depresso-conoidea, sutura vix impressa; anfr. 6, convexi, regulariter accrescentes, ultimus non descendens, ad peripheriam carinatus, subtus tumidus; carinâ versus aperturam minus acutâ; apertura obliqua, rotundato-lunata, marginibus convergentibus; peristoma tenue, margine columellari curvato, denique verticali, undique expansulo, juxta perforationem late reflexo. Diam. maj. 23.5, min. 21, alt. 12 mm.

Hab. Khatmandu, Nepal.

Near *B. camura* Bs., but distinguished by a lower spire, smaller umbilicus, stronger sculpture, the absence of decussating striation and by less acute carination.

The types are in Col. Godwin-Austen's collection now in the British Museum.

TAPHROSPIRA †, gen. nov.

Testa depressa vel globoso-depressa, tenuis, cornea, ab illâ Macrochlamydis Bs., fossâ spirali extra suturam in omnibus anfractibus tantum diversa.

Typus *T. convallata*, Bs.

* For explanation of the Plate, see p. 447.

† τάφρος, a ditch or trench; σπειρα, spiral.

Animal not known.

So far as is known, the following species should be referred to this genus:—

- T. convallata* Bens. Tenasserim.
*T. bathycharax** Bens. MS. Andaman Islands.
T. compluvialis Blf. Arakan Hills, W. side.
T. excavata, sp. nov. Hills south of Assam.

TAPHROSPIRA EXCAVATA, sp. nov. (Plate XXV. fig. 3.)

Helix compluvialis, Hanley & Theob. Conch. Ind. pl. 88. figs. 1, 4 (1874), nec *Nanina compluvialis* Blf. (1865).

Testa perforata, globoso-depressa, tenuis, fusco-straminea, cornea, diaphana, nitida, minute transversim atque subobsolete sub lente longitudinaliter striata; spira parum exserta, apice obtuso, fossa suturali lata sed parum profunda; anfr. 5, superne extra fossam suturalem acute angulati, ultimus ad peripheriam rotundatus, subtus inflatus, versus aperturam vix descendens; apertura parum obliqua, rotundato-lunaris, superne emarginata, fere aequae lata ac alta; peristoma tenue, vix sinuatum, margine columellari superne verticali, breviter triangulatum reflexo. Diam. maj. 15, min. 13, alt. 9 mm.

Hab. ad Asalu in provincia Cachar septentrionali (Godwin-Austen), necnon in montibus Khasi dictis teste Nevill.

This species resembles *T. compluvialis*, for which it has been mistaken, but which is a much less globose form and smaller, with a smaller, more oval and more oblique mouth, and closer and more distinct longitudinal striation under the microscope. *T. compluvialis* is figured for comparison, Pl. XXV. fig. 4.

MACROCHLAMYS KULUENSIS Nevill MS. (Plate XXV. fig. 5.)

Testa aperte perforata, subumbilicata, subgloboso-depressa, tenuis, translucens, nitida, pallide cornea; spira conoidea, sutura impressa; anfr. 5½, convexi, ultimus valde major, ad peripheriam rotundatus, subtus tumidus; apertura obliqua, rotundato-lunata, subaeque lata ac alta; peristoma tenue, rectum, margine columellari verticali, triangulatum reflexo. Diam. maj. 12, min. 10.5, alt. 7 mm.

Hab. in pago Himalayano Kulu (coll. B.M.).

Near *M. glauca* and *M. nuda*, but distinguished by much more open perforation and rounder mouth.

MACROCHLAMYS SUPERFLUA, sp. nov. (Plate XXV. fig. 7.)

Testa perforata, depressa, tenuis, polita, translucens, vix striata, sub lente lineis impressis subconfertis spiralibus, decussatula, luteo-vel fusco-cornea; spira parum elevata, sutura bene impressa; anfr. 6, convexi, ultimus valde latior, ad peripheriam rotundatus, subtus convexus; apertura obliqua, subovate lunata, latior quam alta; peristoma tenue, margine basali

* Described by Mr. Hugh Fulton, Journ. Mal. x. p. 99 (1903).

recto, columellari superne verticali atque sublata reflexo, tunc oblique curvato. Diam. maj. 30, min. 17·5, alt. 10 mm.

Hab. in valle fluminis Tista, in provincia Sikhim interiore Himalayana satis frequens (*W. T. B.*).

This is a much larger shell than *M. sequax* with a different sculpture. The spaces between the longitudinal impressed lines appear papillose when considerably magnified.

MACROCHLAMYS (?) ATOMA Fairbank MS. (Plate XXV. fig. 6.)

Testa aperte perforata, depressa, discoidea, solidula, nitida, vitrea, lineis impressis parallelis subdistantibus spiralibus vel concentricis undique sub lente striata, albido-cornea; spira fere plana, sutura impressa; anfr. 3½, regulariter accrescentes, superne convexi, ultimus non descendens, ad peripheriam rotundatus, subtus plano-convexus; apertura parum obliqua, lunata; peristoma tenue, marginibus supero basaliqve leviter arcuatis, columellari fere horizontali, haud reflexo. Diam. maj. 1·5, min. 1·2, alt. 0·6 mm.

Hab. prope ripas fluminis Godavari (*W. T. B.*).

This minute shell, found commonly amongst the debris left behind by river-floods, was named in MS. by the late Rev. S. B. Fairbank 40 years ago, and was mentioned in a report of mine written in 1866 and published in my absence in the Records of the Geological Survey of India, vol. i. 1870, p. 62. The typical specimens are from Paitan near Ahmednagar, and I have specimens from various places as far to the south-east as the first barrier on the Godavari at Dumagudem, also from the Wardha near Nagpur, and I believe I had some from the Nerbudda Valley.

This is probably not a *Macrochlamys* but the animal is unknown, only dead shells having been found. The only allied Indian form appears to be *M. anona* G.-A., from Calcutta, a much less depressed shell.

MACROCHLAMYS PRAVA, sp. nov. (Plate XXV. fig. 9.)

Testa perforata, subgloboso-depressa, tenuis, nitida, polita, quasi-obsolete sub lente spiraliter striata, rufescenti-fusca; spira vix elevata, conoidea, sutura parum impressa; anfr. 5, convexi, ultimus latior, ad peripheriam rotundatus, subtus tumidiusculus; apertura fere verticalis, subovato-lunata; peristoma tenue, rectum, margine columellari superne fere verticali ibidem reflexiusculo. Diam. maj. 10·5, min. 9, alt. 5·5 mm.

Hab. ad urbem Bèypur prope litus Malabaricum (*Fairbank*): etiam ad latus occidentale montium Nilgiri (*W. T. B.*), et Anaimalai (*Beddome*), preterea in provincia Travancore (*Day*).

A common and rather widely spread form, resembling the Arakan species *M. kumahensis* Theob. & Stol. in form.

MACROCHLAMYS RUTILA, sp. nov. (Plate XXV. fig. 11.)

Testa perforata, depressa, tenuis, vitrea, polita, dense minuteque regulariter sub lente et supra et subtus longitudinaliter

(*spirālīter*) *striata*, *castanea*; *spira humilis*, *sutura leviter impressa*; *anfr.* 6, *convexi*, *ultimus latior*, *ad peripheriam rotundatus*, *subtus convexus*; *apertura parum obliqua*, *lunata*; *peristoma tenue*, *marginē superiore vix arcuato*, *basali subrecto*, *columellari obliquo*, *breviter triangulatim reflexo*. *Diam. maj. vix 15*, *min. 13*, *alt. 6 mm.*

Hab. in dumeto 'Anagundi shola' dicto montium Anaimalai (Beddome).

MACROCHLAMYS CHAOS, sp. nov. (Plate XXV. fig. 8.)

Testa perforata, *conoideo-depressa*, *subglobosa*, *tenuis*, *nitida*, *vitrea*, *transversim striatula*, *sub lenie lineis minutis crebris flexuosis spiralibus subobsolete sculpta*, *pallide fulva*; *spira parum elevata*, *apice acuto*, *sutura impressa*; *anfr.* $5\frac{1}{2}$, *convexiusculi*, *ultimus latior*, *ad peripheriam rotundatus*, *subtus convexus*; *apertura obliqua*, *rotundo-lunata*, *latior quam alta*; *peristoma pertenuē*, *rectum*, *marginē columellari curvato*, *superne verticali et breviter triangulatim reflexo*. *Diam. maj. 16*, *min. 14*, *alt. 8 mm.*

Hab. in Burma, ad Thayet Myo atque haud procul ab Ava (W. T. B.).

Very near the Bengal *M. subjecta* Bs., but distinguished by the presence of longitudinal sculpture. It is also more vitreous and less globose, with a narrower last whorl and smaller mouth.

MACROCHLAMYS NOTHA, sp. nov. (Plate XXV. fig. 19.)

Nanina petasus Blf. Jour. As. Soc. Beng. 1865, pt. 2, p. 86, nec Benson.

Testa perforata, *depressa*, *parum polita*, *vix striatula*, *lineis concentricis confertis ex tuberculis minutissimis constantibus sub lente undique ornata*, *flavescenti-fulva*; *spira breviter conoidea*, *apice subacuto*, *sutura impressa*; *anfr.* 6-7, *convexiusculi*, *lente accrescentes*, *ultimus ad peripheriam rotundatus*, *subtus convexus*; *apertura vix obliqua*, *fere verticalis*, *lunata*; *peristoma tenue*, *marginē basali arcuato*, *columellari expanso*, *oblique curvato*, *denique ad perforationem verticali*. *Diam. maj. 11.5*, *min. 10.5*, *alt. 6 mm.*

Hab. in montibus Aracanensibus inter Prome et Tongoop; necnon prope Thayet Myo, in provincia Pegu Burmannica.

Very close to *M. petasus* Bs., but distinguished by want of labiation and presence of longitudinal sculpture.

MACROCHLAMYS NOXIA, sp. nov. (Plate XXV. fig. 14.)

Testa minute et subobtecte perforata, *depressa*, *tenuis*, *nitida*, *polita*, *haud usquam striata*, *pallide castanea*, *subtus*, *nisi juxta peripheriam*, *albescens*; *spira vix elevata*, *conoidea*, *sutura impressa*; *anfr.* 6, *convexi*, *haud celeriter crescentes*, *ultimus ad peripheriam rotundatus*, *subtus convexus*; *apertura parum obliqua*, *late lunata*; *peristoma tenue*, *marginē basali arcuato*,

columellari obliquo, superne breviter reflexo. Diam. maj. 9, min. 8, alt. 4 mm.

Hab. ad latus occidentale fluminis Irawadi in pago Bassein provinciæ Pegu Burmannicæ (*W. T. B.*).

Varietas, anfractibus 5 munita, et spira aliquanto elevatiuscula prope portum Akyab in provincia Arakan invenitur.

This is near *M. hypoleuca* Blf. from Upper Pegu, best distinguished by being narrowly perforate and more depressed, and by the complete want of sculpture.

MACROCHLAMYS CURVILABRIS, sp. nov. (Plate XXV. fig. 13.)

Testa perforata, depressa, glabra, polita, vix striatula, fusca; spira parum elevata, sutura bene impressa; anfr. 5½, convexi, regulariter crescentes, ultimus versus aperturam aliquantum descendens, ad peripheriam rotundatus, subtus plano-convexus; apertura obliqua, late lunata; peristoma obtusum, intus albolabiatum, sinuosum, margine supero vix arcuato, externo sinuato, basali valde arcuato, columellari obliquo, vix reflexiusculo. Diam. maj. 5·5, min. 5, alt. 2 mm.

Hab. in montibus Aracanensibus ad latus occidentale pagi Burmannici Prome (*W. T. B.*).

This is almost a miniature of the Tenasserim *M. aspides* Bs.

MACROCHLAMYS SPRETA, sp. nov. (Plate XXV. fig. 12.)

Testa minute et subobtectè perforata, depressa, tenuis, nitida, polita, lineis impressis spiralibus sub lente undique ornata, pallide castanea, subtus circa perforationem albescens; spira parum elevata, conoidalis, sutura vix impressa; anfr. 5, convexi, ultimus majusculus, ad peripheriam rotundatus, subtus convexus; apertura obliqua, subovato-lunaris; peristoma tenue, rectum, margine columellari obliquo, leviter reflexo. Diam. maj. 8, min. 7, alt. 3·5 mm.

Hab. ad Thamandewa in pago Bassein et in aliis partibus provinciæ Pegu Burmannicæ (*W. T. B.*).

Near *M. subpetasus* Nevill and *M. noxia*, but easily recognised by the spiral striation.

MACROCHLAMYS PATENS, sp. nov. (Plate XXV. fig. 15.)

Testa anguste sed perspectivè umbilicata, conoideo-depressa, sublenticularis, nitida, polita, lineis impressis spiralibus haud crebris spatiis inequalibus discretis undique sub lente ornata, fulvo-fusca; spira conoidea, sutura parum impressa; anfr. 4½, convexiusculi, ultimus paullo lator, ad peripheriam obtuse angulatus, subtus convexus, circum umbilicum compressus; apertura diagonalis, fere trapezoidalis, subsecuriformis; peristoma tenue, rectum, margine columellari obliquo, triangulatum reflexo. Diam. maj. 7, min. 6, alt. 3·5 mm.

Hab. in Pegu; circa Thayet Myo, Bassein, &c. (*W. T. B.*).

MACROCHLAMYS PSEUDOCHOINIX, sp. nov. (Plate XXV. fig. 10.)

Testa subobtecte perforata, depressa, tenuis, glabra vix politula, subobsolete plicato-striata et lineis minutis confertis subflexuosis spiralibus undique decussatula, fusco-cornea; spira fere plana, sutura vix impressa; anfr. 5, planiusculi, ultimus valde latior, ad peripheriam rotundatus, subtus tumidus; apertura obliqua, subdiagonalis, magna, subovato-lunata; peristoma acutum, margine supero arcuato, columellari juxta perforationem verticali, breviter reflexo, perforationem partim tegente. Diam. maj. 14, min. 12, alt. 7 mm.

Hab. in insulâ 'Great Cocos' dictâ in sinu Bengalensi.

Near the Andaman *M. choinix*, but more tumid beneath, less flat above, and with much stronger spiral sculpture. For this shell I am indebted to Mr. Hugh Fulton. The Great Cocos is one of a group of islands between the Andamans and Cape Negrais in Arrakan.

MICROCYSTINA STUARTI Godwin-Austen MS. (Plate XXV. fig. 16.)

Testa imperforata, vel subperforata, convexo-depressa, pertenuis, nitida, politissima, minute, haud crebre, sub lente undique lineis parallelis striata, luteo-fusca; spira parum elevata, convexo-conoidea, sutura vix impressa; anfr. fere 5, plano-convexi, ultimus non descendens, ad peripheriam rotundatus, subtus convexus; apertura obliqua, lunata; peristoma tenue, margine columellari obliquo, superne in angulum prominentem, perforationem claudentem, dilatato. Diam. maj. 4.5, min. 4, alt. 2.5 mm.

Hab. in insulis Andamanicis (coll. G.-A.).

Near the Nicobar *M. rinki* Mörch, but smaller, rather thinner, more closely wound and imperforate.

MICROCYSTINA SHEVAROYANA, sp. nov. (Plate XXV. fig. 17.)

Testa aperte perforata, subumbilicata, conoideo-depressa, tenuis, translucens, polita, dense minute et subflexuose spiraliter undique sub lente striata, succinea; spira parum elevata, conoidea, sutura impressa; anfr. 6, superne convexi, ultimus ad peripheriam rotundatus, subtus convexiusculus; apertura parum obliqua, lunata; peristoma tenue, marginibus supero basaliqve leviter arcuatis, columellari obliquo, obtuso, expansiusculo atque superne reflexiusculo, juxta perforationem angulatim dilatato. Diam. maj. 8.25, min. 7.5, alt. 4 mm.

Hab. in montibus Shevaroy dictis, Indiæ meridionalis (W. M. Daly).

Near the Ceylon *M. bintennensis* (*M. perfucata* var. *bintennensis* G.-A.), but distinguished by more open perforation, more numerous whorls, and paler colour. I am indebted to Mr. Hugh Fulton for specimens of this shell.

EUPLECTA PULCHELLA, sp. nov. (Plate XXV. fig. 18.)

Testa subobtecte perforata, conoideo-depressa, fere lenticularis, solidiuscula, succineo-cornea, decussatim striatula, superne sub lente liris obliquis flexuosis graniferis et lineis spiralibus impressis pulchre ornata, subtus glabra, polita; spira conoidea, apice obtuso, sutura impressa; anfr. 5, convexi, ultimus versus aperturam aliquanto descendens, ad peripheriam obtuse angulatus, infra convexus, circa perforationem compressus; apertura magna, diagonalis, rotundo-lunata; peristoma tenue, superne juxta anfractum penultimum arcuatum, margine columellari obliquo, expansiusculo, ad perforationem latius reflexo et incrassato. Diam. maj. 11·5, min. 10, alt. 6·5 mm.

Hab. in montibus Anaimalai dictis Indiæ australis (*Beddome*).

This shell, whilst in some respects recalling that of *E. layardi*, is distinguished by its large diagonal mouth and granular sculpture in flexuous transverse lines.

POLITA (?) TURBINATA, sp. nov. (Plate XXV. fig. 2.)

Testa aperte umbilicata, depressa, tenuis, pallide cornea, nitida, polita, sub lente minutissime spiraliter striata; spira convexa; anfr. 4½, convexi, ultimus undique rotundatus fere teres; apertura obliqua, rotundo-lunata, marginibus convergentibus; peristoma tenue, margine superiore arcuato, columellari via superne verticali, regulariter curvato, haud reflexo. Diam. maj. 4·5, min. 4, alt. 2 mm.

Hab. in summis montibus Nilgiri dictis Indiæ meridionalis ad alt. 7000 ped. (*Beddome*).

This is a very near ally of the Ceylonese *Polita* ? *notabilis* Sykes. It is smaller and the aperture is more oblique.

EXPLANATION OF PLATE XXV.

- Fig. 1. *Bensonia nepalensis*, nat. size, p. 441.
 2. *Polita* (?) *turbinata*, nat. size and $\times 3$, p. 447.
 3. *Taphrospira excavata*, nat. size, p. 442.
 4. *T. compluvialis*, nat. size, p. 442.
 5. *Macrochlamys kuluensis*, nat. size, p. 442.
 6. *M.* (?) *atoma*, nat. size, and two views $\times 15$, also sculpture further enlarged, p. 443.
 7. *M. superflua*, nat. size, p. 442.
 8. *M. chaos*, nat. size, p. 444.
 9. *M. prava*, nat. size and $\times 2$, p. 443.
 10. *M. pseudochoinia*, nat. size, two views, p. 446.
 11. *M. rutila*, nat. size, p. 443.
 12. *M. spreta*, nat. size and $\times 3$, p. 445.
 13. *M. curvilabris*, nat. size, and two views, $\times 3$, p. 445.
 14. *M. noxia*, nat. size and $\times 2$, p. 444.
 15. *M. patens*, nat. size, and two views $\times 3$, p. 445.
 16. *Microcystina stuarti*, nat. size and $\times 3$, also basal and columellar margins of peristome further enlarged, p. 446.
 17. *Microcystina shevaroyana*, nat. size, p. 446.
 18. *Euplecta pulchella*, nat. size, and sculpture much enlarged, p. 447.
 19. *Macrochlamys notha*, nat. size, p. 444.